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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,089	03/23/2006	Lester H. Landis JR.	2004UR001	6993

7590 12/28/2009  
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EXAMINER
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JONES, HUGH M

ART UNIT	PAPER NUMBER
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2128

MAIL DATE	DELIVERY MODE
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12/28/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/573,089	<b>Applicant(s)</b> LANDIS ET AL.	
	<b>Examiner</b> Hugh Jones	<b>Art Unit</b> 2128	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-15, 20-22, 25, 26 and 54-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-15, 20-22, 25, 26 and 54-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/23/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1-11, 13-15, 20-22, 25-26, 54-56 of US Application 10/573,089, filed 3/22/2006, are presented.
2. The Examiner proposes that an interview be conducted once Applicants have had a chance to review the office action.

### *Claim Objections*

3. Claim 26 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

4. Claim 26 does not further limit claim 25. The first two limitations of claim 1 recite:

providing a reservoir framework having a plurality of  
three-dimensional cells:

building a cell framework having a plurality of cells,  
wherein the cell framework comprises two or more cells of the  
reservoir framework; and

populating some or all of the cells of the cell framework  
with one or more reservoir property values to generate a three-  
dimensional cell model;

Claim 26 recites:

wherein the cell framework is three dimensional.

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The reservoir framework is constructed with three-dimensional cells. The cell framework is constructed using some of said cells. Since those cells are three-dimensional, the cell framework is also three-dimensional. Claim 26 therefore does not further limit claim 25.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-11, 13-15, 20-22, 25-26, 54-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Independent claims 1, 25 refer to “variability”. For example, claim 1 recites the limitation:

calculating, on a computer, the variability between the reservoir property values for the reservoir framework.

. However, it is unclear what is being examined/compared for variability:

- Property values at different locations in the reservoir?
- In different cells?
- The variability of property values over time/iteration. Note there is no iteration in claim 1.
- It is also unclear what constitutes the measure of variability.

8. Claim 1 recites in relevant part:

And wherein the cell framework comprises two or more cells of the reservoir framework...

However, claim 2 recites:

wherein the volume of the second cell framework is substantially the same size as one of the cells of the first reservoir framework.

It is unclear how the cell framework can both comprise:

- 1) two or more cells, and
- 2) the volume of those two cells be about that of one of the cells.

It requires speculating/reading in of limitations to 1) assume that the two or more cells substantially overlap each other or that 2) the cell sizes might not be constant, so as to satisfy both conditions.

9. Claim 1 calls for populating some or all of the cells of the cell framework with one or more reservoir property values to generate a three-dimensional cell model, and then carrying out a flow simulation on the cell model to generate one or more effective reservoir property values for the reservoir framework. It is unclear what is being accomplished. It appears that the simulation will return the original property values, in the absence of a change of any other variable; such variables are not claimed.

Compare to claim 25, wherein the cells are modified prior to each flow simulation.

### ***Claim Interpretation***

10. For the reasons provided earlier, the state of the claims in the instant application precludes a limitation-by-limitation assessment of the claimed invention compared to the

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prior art. The Examiner cannot interpret the meanings of the claims without relying on considerable speculation. See *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962). Independent claim 1 (and dependent claims) are not considered with respect to art. Claim 25 can be more reasonably interpreted and is considered.

### ***Allowable Subject Matter***

11. Claim 25 is tentatively (subject to how amendment to traverse the 112 rejections affect the scope of the claim) identified as novel and non-obvious over the prior art of record.

12. The following is a statement of reasons for the indication of allowable subject matter: All the elements in claim 25 are known individually (for example, using the second framework along with the sampling constitutes small scale modeling of an intractable problem [characterized by millions of cells]; another example is modeling the effect of 'net to gross' on reservoir properties, and seeking convergence of the solution). However, the particular combination and sequence of steps does not appear to be disclosed in the prior art of record. This includes the particular sequence of steps of building the second framework, and extracting cell samples from the second framework.

### ***Response to Arguments***

13. Applicant's arguments filed 9/1/2009 have been fully considered but are not persuasive.

14. The 101 rejections are withdrawn in view of the amendment.

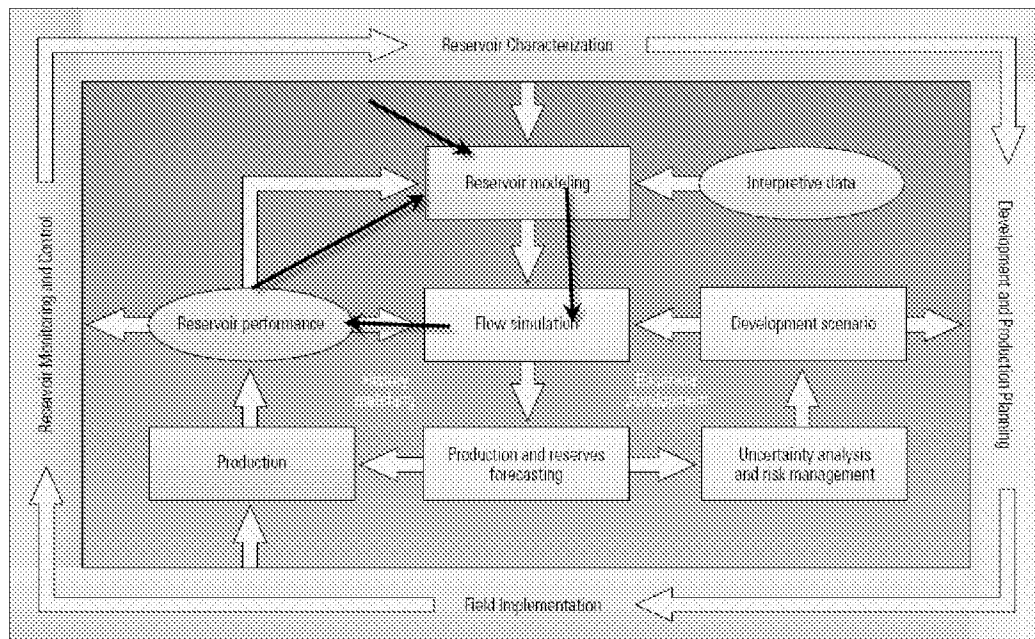
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15. All other arguments are moot in few of the new rejections/indication of novel material.

### **Conclusion**

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Bean et al.: Probabilistic Pay Flags and Reservoir Quality in Greater Burgan Field, Kuwait. Especially note page 4.
- Bouska et al., Validating Reservoir Models to Improve Recovery. Note (from page 35):



^ Future reservoir management. Reservoir optimization is an iterative process that normally begins with reservoir characterization of a new discovery, but can be implemented at any stage in an existing field. Reservoir management will rely increasingly on monitoring and modeling reservoir performance to optimize oil and gas production. The key additional element will be ongoing collection of data at the reservoir scale, including seismic data and wellbore measurements, so that the development plan can be assessed and, where necessary, modified. Monitoring the reservoir closely will overcome the current problems of history matching using only the loose constraints of production data.]

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hugh Jones whose telephone number is (571) 272-3781. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.



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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hugh Jones/  
Primary Examiner, Art Unit 2128